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US006261836B1

(12) **United States Patent**
Cech et al.(10) **Patent No.:** **US 6,261,836 B1**
(45) **Date of Patent:** ***Jul. 17, 2001**(54) **TELOMERASE**(75) **Inventors:** **Thomas R. Cech, Boulder, CO (US);**
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(US)(73) **Assignees:** **Geron Corporation, Menlo Park, CA**
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Corporation, Boulder, CO (US)(*) **Notice:** Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.This patent is subject to a terminal dis-
claimer.(21) **Appl. No.:** **08/854,050**(22) **Filed:** **May 9, 1997****Related U.S. Application Data**(63) Continuation-in-part of application No. 08/851,843, filed on
May 6, 1997, now Pat. No. 6,093,809, which is a contin-
uation-in-part of application No. 08/846,017, filed on Apr. 25,
1997, which is a continuation-in-part of application No.
08/844,419, filed on Apr. 18, 1997, now abandoned, which
is a continuation-in-part of application No. 08/724,643, filed
on Oct. 1, 1996, now abandoned.(51) **Int. Cl.⁷** **C07H 21/04; A61K 38/00;**
C07K 16/00; C07K 17/00(52) **U.S. Cl.** **435/325; 435/320.1; 435/7.1;**
435/7.2; 530/324; 530/350; 514/2; 536/23.2;
536/23.5(58) **Field of Search** **435/6, 7.23, 325,**
435/320.1, 7.1, 7.2; 530/324, 350; 514/2;
536/23.2, 23.5(56) **References Cited****U.S. PATENT DOCUMENTS**

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Apple; William M. Smith(57) **ABSTRACT**

The present invention is directed to telomerase nucleic acids and amino acids. In particular, the present invention is directed to nucleic acid and amino acid sequences encoding various telomerase protein subunits and motifs, including the 123 kDa and 43 kDa telomerase protein subunits of *Euplotes aediculatus*, and related sequences from *Schizosaccharomyces*, *Saccharomyces* sequences, and human telomerase. The present invention is also directed to polypeptides comprising these telomerase protein subunits, as well as functional polypeptides and ribonucleoproteins that contain these subunits.

12 Claims, 81 Drawing Sheets